CIVE 551 – Advanced Building Science

Term – Summer 2018 (201805)

Instructor
Dr. Phalguni Mukhopadhyaya
Phone: (250) 472-4546
E-mail: phalguni@uvic.ca

Office Hours
Days: Thursday & Friday
Time: By Appointment Only
Location: ECS 318

LECTURE DATE(S)
Section: A /CRN30119
Days: Monday
Time: 01:00 pm - 2:50 pm
Location: Engineering Comp Science Bldg 130

TUTORIAL SECTIONS
Section: Not Applicable
Days: Not Applicable
Time: Not Applicable
Location: Not Applicable

TA Name
Not Applicable

E-mail
Not Applicable

Office
Not Applicable

Required Text
Title: ASHRAE Handbook—Fundamentals
Author: Edited by ASHRAE Technical Committee
Publisher/Year: American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)/2013

Optional Text
Title: Building Science for Building Enclosures
Author: John F. Straube, Eric F. P. Burnett
Publisher/Year: Building Science Press/2005

Reference Materials: To be provided during the class.

COURSE OBJECTIVES:
This course will cover following topics:
Scope and definition, heat-air-moisture transport mechanisms, hygrothermal properties, test methods, climate characterization, moisture management, durability index, energy efficient building envelopes, whole building energy performance, application of numerical simulation tools, forensic investigations.

LEARNING OUTCOMES:
On completion of this course students will be able to: (1) explain the fundamentals of heat-air-moisture transport mechanisms through building materials and exterior building envelopes, (2) define and explain the basic hygrothermal properties of building materials and their impacts on moisture management and energy performance of exterior building envelopes, (3) describe the test procedures to determine the hygrothermal properties of building materials and their limitations, (4) Explain the basic elements of exterior and interior climate...
climates critical for hygrothermal performance of exterior building envelopes, and (5) carry out hygrothermal and durability performance assessment of exterior building envelopes.

<table>
<thead>
<tr>
<th>Weight &amp; Date(s) of Assessments:</th>
<th>Weight</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>20 %</td>
<td>Regular intervals (each week)</td>
</tr>
<tr>
<td>Mid-term</td>
<td>40 %</td>
<td>8th week</td>
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<tr>
<td>Final Exam – Project Presentation and Report</td>
<td>40 % (10% Presentation, 5% Class room discussion and 25% Report).</td>
<td>Presentation will start from 11/12th week. Final reports and presentation slides to be submitted (e-copy) on or before Monday, August 13th 2018 (5:00 PM)</td>
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ASSIGNMENTS

The assignment problems will be a mix of concepts, theories and problems. **Students are required to work independently on each assignment.**

PROJECTS:

Final exam will be based on evaluation of a project presentation, discussion and report. Each student will independently work on a defined project from the 5th week of the term.

NOTE:

- Failure to pass the final exam (project) will result in a failing grade for the course.
- The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

COURSE LECTURE NOTES

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

Assignment of E grade and supplemental examination for this course will be at the discretion of the Course Instructor. The rules for supplemental examinations can be found in the current Undergraduate Calendar.

GENERAL INFORMATION

Note to Students:

Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair’s Secretary to set up an appointment.

*Attendance*

Students are expected to attend all classes in which they are enrolled. An academic unit may require a student to withdraw from a course if the student is registered in another course that occurs at the same time....

An instructor may refuse a student admission to a lecture, laboratory, online course discussion or learning activity, tutorial or other learning activity set out in the course outline because of lateness, misconduct, inattention or failure to meet the responsibilities of the course set out in the course outline. Students who neglect their academic work may be assigned a final grade of N or debarred from final examinations.

Students who do not attend classes must not assume that they have been dropped from a course by an academic unit or an
instructor. Courses that are not formally dropped will be given a failing grade, students may be required to withdraw and will be required to pay the tuition fee for the course.” UVic Calendar, (2017-2018)
http://web.uvic.ca/calendar/undergrad/info/regulations/attendance.html

Accommodation of Religious Observance
The University recognizes its obligation to make reasonable accommodation for students whose observance of holy days might conflict with the academic requirements of a course or program. Students are permitted to absent themselves from classes, seminars or workshops for the purposes of religious or spiritual observance. In the case of compulsory classes or course events, students will normally be required to provide reasonable notice to their instructors of their intended absence from the class or event for reasons of religious or spiritual observance. Where a student’s participation in a class event is subject to grading, every reasonable effort will be made to allow the student to make up for the missed class through alternative assignments or in subsequent classes. Students who require a rescheduled examination must give reasonable notice to their instructors. If a final exam cannot be rescheduled within the regular exam period, students may request an academic concession. To avoid scheduling conflicts, instructors are encouraged to consider the timing of holy days when scheduling class events. For further information, including a list of days of religious observances, please contact the Equity and Human Rights Office or visit their website: <web.uvic.ca/eqhr>

Discrimination and Harassment Policy (GV0205)
http://web.uvic.ca/calendar/general/policies.html

Standards for Professional Behaviour
"It is the responsibility of all members of the Faculty of Engineering, students, staff and faculty, to adhere to and promote standards of professional behaviour that support an effective learning environment that prepares graduates for careers as professionals..."

You are advised to read the Faculty of Engineering Document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities. https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf

Policy on Academic Integrity
Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the Undergraduate Calendar http://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html for the UVic policy on academic integrity.

Equality
This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Resource Centre for Students with a Disability located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members."